THE EFFECT OF ORAL CONTRACEPTIVE USE BEFORE CONTROLLED OVARIAN HYPERSTIMULATION ON IVF CYCLE OUTCOMES

Goldsammler, Michelle; Lieman, Harry; Buyuk, Erkan

Abstract Body

Background: Oral contraceptive pills (OCPs) have been used as a strategy to suppress natural pituitary gonadotropin release in Assisted Reproductive Technology cycles (ART). This suppression is theorized to allow uniform recruitment of follicles with the added benefit of easy scheduling of an IVF cycle. However, prior studies showed mixed results with OCP use before the start of controlled ovarian stimulation (COH) during an IVF cycle.

Objective: To explore the effect of OCP use before the start of COH on IVF cycle outcomes.

Hypothesis: Oral contraceptive pill use prior to COH decreases live birth rates in IVF cycles.

Materials and Methods: Historical cohort study of subfertile women undergoing first IVF/ICSI cycle with fresh transfer between January 2008 and August 2014 at Montefiore's Institute for Reproductive Medicine and Health. Women underwent pituitary suppression with either GnRH agonist or late follicular phase antagonist protocol, with or without oral contraceptive suppression prior to start of COH. Demographic and cycle characteristics and outcome data were collected. Primary outcomes were clinical pregnancy and live birth rates. The data was analyzed using STATA v15. $P<0.05$ was considered significant.

Results: Medical records of 487 women who underwent COH-IVF cycle were analyzed. Of these, 210 underwent pituitary suppression with OCPs, while the remaining 277 women did not use OCPs. Demographic and cycle characteristics of women categorized according to OCP use are presented in Table 1. Unadjusted clinical pregnancy and live birth rates with and without OCP use were 36.7% vs. 41.1% (p = 0.32) and 25% vs. 33% (p = 0.05), respectively. Logistic regression analysis was used to account for age as a confounder. After controlling for age, women who used OCPs before the start of COH were less likely to have a live birth when compared to women who did not use OCPs (aOR=0.592, 95% CI: 0.39- 0.9).

Conclusions: Oral contraceptive pill use before the start of COH in IVF cycles is associated with decreased live birth rates.

Abstract image

Table 1: Demographics and Unadjusted Outcomes

	OCP (any OC use) n = 210	No OCP use n = 277	P Value
Age mean (+ SEM)	35.4 (0.316)	36.2	0.08
BMI	26.19 (0.39)	27.34 (0.35)	0.03
Race^	N= 209	N = 276	0.03
Asian	20 (9.57%)	15 (5.43%)	
African American	25 (11.96%)	36 (13.04%)	
Hispanic	35 (16.75%)	30 (10.87%)	
Caucasian	62 (29.67%)	69 (25%)	
Other	1 (0.48%)	2 (0.72%)	
Unknown	66 (31.58%)	124 (44.93%)	
Gravity	1.11 (0.09)	1.39 (0.10)	0.04
Parity	0.43 (0.06)	0.49 (0.05)	0.47
Etiology^	N= 208	N= 277	0.60
Male Factor	44 (21.15%)	47 (16.97%)	
Tubal Factor	28 (13.46%)	46 (16.61%)	
DOR	14 (6.73%)	21 (7.58%)	
Endometriosis	3 (1.44%)	5 (1.81%)	
Unexplained	16 (7.69%)	33 (11.91%)	
Anovulation	16 (7.69%)	16 (5.78%)	
Other	5 (3.9%)	4 (1.44%)	
Mixed	82 (39.42%)	105 (37.91%)	
AMH	1.90 (0.25)	1.70 (0.25)	0.57
FSH Max	7.76 (0.20)	8.07 (0.20)	0.28
AFC	13.22 (0.49)	12.61 (0.44)	0.36
Cycle Type^	N= 210	N= 277	0.21
IVF	56 (26.67%)	85 (30.69%)	
ICSI	90 (42.86%)	130 (46.93%)	
IVF/ICSI	57 (27.14%)	57 (20.58%)	
TESE	7 (3.33%)	5 (1.81%)	
Days of Stimulation	10.64 (0.12)	10.59 (0.12)	0.79
Total Gonadotropin Dose (IU)	3101.12 (107.2)	3018.40 (89.2)	0.55
Endometrial Thickness (mm)*	10.14 (0.15)	10.73 (0.16)	0.01
Progesterone (ng/mL)*	0.90 (0.03)	0.88 (0.03)	0.75
Clinical Pregnancy	77 (36.67%)	114 (41.16%)	0.32
Live Birth	52 (25.12%)	92 (33.21%)	0.05

^ Race, Cycle Type, and Etiology shown in frequency (%)

*endometrial thickness and progesterone levels = on day of trigger